L 1462-66

ACCESSION NR: AP5012840

ber of fungal antibiotics are mentioned as promising agents, especially in combination with sublethal doses of insecticides. Deficiencies in current work were pointed out, and recommendations were made for future research.

ASSOCIATION: None

SUBMITTED: 00 NO REF SOV: 000 SUB CODE: LS

ENCL: 00 OTHER: 000

Card 2/2

LEBEDEV, G.A.

Dependence of the wet flashover voltage of insulators on the air pressure. Elektrichestvo '53, No.3. 7-10. (MLRA 6:3)
(EEA 57 no.673:114 '54)

LEBEDEV, G.A.; KUVSHINSKIY, Ye.V.

Origin of patterns of the failure surfaces of polymethyl-mathacrylate. Dokl. AN SSSr 108 no.6:1096-1097 Je '56. (MLRA 9:10)

1. Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR. Predstavleno akademikom A.V. Karginym.
(Methacrylic acid)

LEBEDEV, G.A.

KURCHINSKIY, E. V., LEBEDEV, G.A.
Institute of High Molecular Compounds of the Acad. Sci. USSR, Leningrad

"High Elasticity Deformation of Hard Amorphous Materials of Polymethyl-Metacrilat Type."

Paper submitted at Leningrad Program of the Confference on the Non-Metallic Soldids of Mechanical Properties. L May 19 - 26, 1958

LEBEDEV, Gennadiy Aleksandrovich; LYUSTIBERG, V.F., inzh., ved. red.; DAYCHIK, M.L., inzh., red.; SOROKINA, T.M., tekhn. red.

[Apparatus for testing the characteristics of polymer samples under tensile stress]Ustanovka dlia issledovaniia kharakteristik polimernykh obraztsov pri rastiazhenii. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 7 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 32. No.P-58-61/10) (MIRA 16:3)
(Polymers--Testing)

LEBEDEV, G. A., Ye. A. KUVSHINSKIY, M. I. MESSONOV and S. K. ZAKHAROV

"The Strength of Amorphous Bodies, Especially Polymers."

report presented at the Conference on Investigation of Mechanical Properties of Non-Metals, by the Intl. Society of Pure and Applied Physics and the AS USSR, at Leningrad, 19-24 May 1958.
(Vest. Ak Nauk SSSR, 1958, no. 9, pp. 109-111)

LEBEDEV, G. A., BESSONOV, M. I., ZAKHAROV, S. K., and KUVSHINSKIY, E. V.

Mechanical Rupture of Hard Polymer Materials."

report presented at the Conf. on Mechanical Properties of Non-Metallic Solids. Leningrad, USSR, 19-26 May 1958.

S/181/60/002/01/22/035
B008/B014

AUTHORS: Lebedev, G. A., Kuvshinskiy, Ye. V.

TITLE: Rules Governing the Deformation of Amorphous Polymethylmethacrylate and Polyvinylacetate by Cold Extraction

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 1, pp. 96-105

TEXT: The article under review shows that it is possible to elongate polymers below the temperature of vitrification continuously (without constrictions) and to study the stress-strain curves quantitatively. Samples with a cross section of up to 1 mm^2 were subjected to tensile tests in the temperature range $+20 \div +160^{\circ}C$. The authors studied polyvinylacetate (PVA) and polymethylmethacrylate (PMMA). The changes in the length and cross section of the samples were examined visually and photographically. Analyses of numerous experiments have shown that stress-strain curves usually show peaks in their initial sections if the sample does not tear up to an elongation of $\sim$ 10 per cent. Contractions were not observed in every case (Fig. 1). It may be assumed that the density of

Card 1/3

VC

the material changes only slightly during the tensile test. Table 1 shows that the change of (lb^2) does not exceed 2.5 ÷ 1.4% at a degree of elongation of $1 \leqslant \lambda \leqslant 2.25$. In addition to the stress-strain curves of PVA foil, Fig. 2 shows drawings of samples elongated to different extents. It was established that the existence of a peak need not be caused by contraction. The development of a contraction is always accompanied by a "plateau" on the stress-strain curve (Section AB in Fig. 1). Relaxation occurs in addition to elastic deformation (Fig. 3). It was proved that the increase of stress is actually due to elastic deformation. A theory of the process of elongation is established on the basis of a generalization of the relations of Maxwell's theory concerning viscous-elastic media. Theoretical stress-strain curves characterized by a steep rise and a flat drop are represented in Fig. 4. The descending branch of the curve (Fig. 4b) represents the dynamic equilibrium between the increase in stress and its relaxation. A differential method was developed for analyzing the intermittent stress-strain curve (Figs. 5 and 6). It is suited for an exact and reliable determination of the differential

√C

Rules Governing the Deformation of Amorphous Polymethylmethacrylate and Polyvinylacetate by Cold Extraction

S/181/60/002/01/22/035
B008/B014

modulus of normal elasticity E and of the rate of relaxation $\frac{\partial \sigma}{\partial t}$ at various stages of deformation. There are 6 figures, 2 tables, and 3 Soviet references.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR, Leningrad
(Institute of High-molecular Compounds, AS USSR, Leningrad)

SUBMITTED: April 14, 1959

VC

Card 3/3

S/181/61/003/009/018/039
B102/B104

AUTHORS: Lebedev, G. A., and Kuvshinskiy, Ye. V.

TITLE: Structural characteristics of the "silver" cracks in polymethyl methacrylate films

PERIODICAL: Fizika tverdogo tela, v. 3, no. 9, 1961, 2672 - 2679

TEXT: The structure of the so-called "silver" cracks which form in the deformation of polymethyl methacrylate and polyvinyl acetate at temperatures below the vitrification point was studied with the aid of the microscope МКУ-1(MKU-1). It was shown that these strongly light-scattering cracks are filled with polymer substances whose nature was changed. For the production of these cracks various films were elongated at temperatures of up to 80°C. Subsequently, microphotographs were taken in transmitted, reflected, and obliquely reflected light. The authors also made interference pictures with an МИИ-1(MII-1) interference microscope. It was found that 20-30-μ deep and about 10-μ wide cuneiform cracks had formed which were almost completely filled with porous polymer whose optical properties considerably differed from the original properties. The polymer in the cracks showed very fine

Structural characteristics of ...

transverse cracks connecting the edges of the main crack. Special experiments with treatment at different temperatures (up to 120°C) showed that obviously due to the heat the "silver" filling the cracks shrinks (compression). The cracks did not disappear upon heat treatment without deformation of the films. This could be easily achieved by compression at room temperature although the cracks remained visible under the microscope. There are 6 figures and 6 references: 4 Soviet and 2 non-Soviet. The latter read as follows: B. Maxvell, L. Rahm. Ind. Eng. Chem., 41, 1948, 1949. C. Hsiao, J. Sauer. J. Appl. Phys. 21, 1071, 1950.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR Leningrad
(Institute of High-molecular Compounds AS USSR, Leningrad)

SUBMITTED: April 10, 1961

LEBEDEV, G.A.; KUZNETSOV, V.P.

Review of G.S.Berger's book "Flotability of minerals." TSvet. met. 36 no.8:95 Ag '63. (MIRA 16:9)
(Flotation)
(Berger, G.S.)

IEBEDEV, G.A.; CHERNYY, A.I.

International Congress and Exhibition of Science and Technology Documentation and Information, Rome, 1964. NTI no.12:22-27 '64. (MIRA 18:3)

ZHEVELEV, G.I.; LEBEDEV, G.A.

Cutting narrow grooves in multitrack heads of magnetic recorders.
Stan. i instr. 36 no.8:41 Ag '65. (MIRA 18:9)

1. LEBEDEV, G. D.

2. USSR (600)

4. Public Health

7. Further observations on the activities of a regional sanitary-epidemiological station.
Fel'd. i akush. No.10, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

LEBEDEV, G. F.

BORISOVSKIY, V. S. and LEBEDEV, G. F. Economical Testing of Internal CombustionEngines (Ekonomichnyy Sposob Ispytaniya Dvigateley Vnutrennego Sgoraniya), pp. 8-9

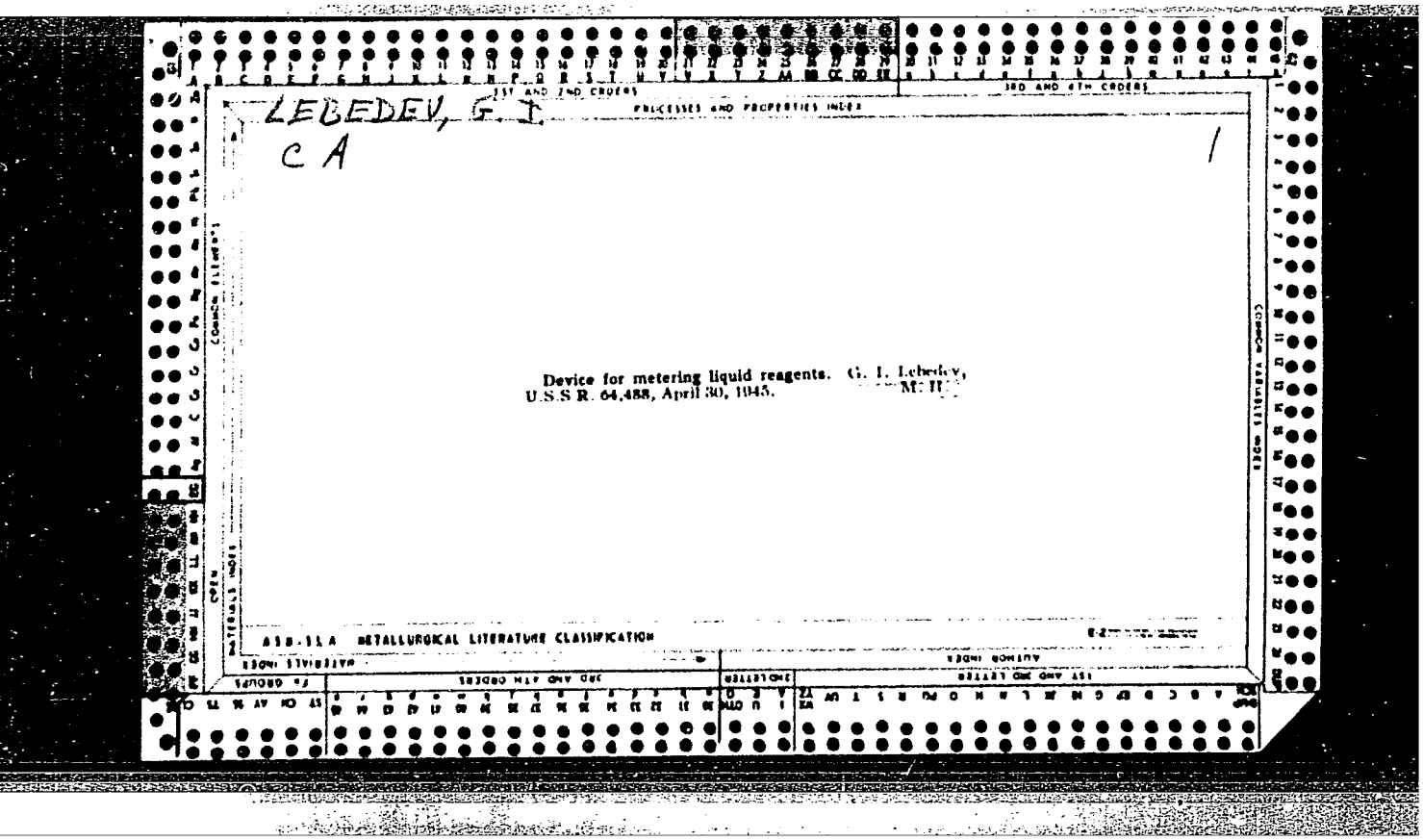
The suggestion deals with a new arrangement of electrical motor equipment used for testing tractor engines. This suggestion won a fourth prize at the Seventh All-Union Cont st on Power Economizing (Drawing).

SO: PROMYSHLENNAYA ENERGETIKA, No. 10, Oct. 1952, Moscow (1502270)

LEBEDEV, G.G.

TE2 diesel locomotives should be modernized. Elek. i tepl. tiaga 4 no.11:43 N '60. (MIRA 13:12)

1. Nachal'nik depo Aktyubinsk.
(Diesel locomotives)



LEBEDEV, G.I.

Akklimatizatsiia drevesnykh kustarnikovykh porod (Acclimatization of shrubs) Moskva, Izd-vo Ministerstvo kommunal'nogo khoziaistva RSFSR, 1953. 140 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 5, August 1954

GAVRILOV, G.S.; LEBEDEV, G.I.

Species and growth characteristics of trees on Moscow boulevards. Gor. khoz. Mosk. 36 no.5:31-34 My '62. (MIRA 15:7)
(Moscow--Trees)

LEBEDEV, G.I.; MEZHOV, A.I.; BORISOV, I.I.

Diagnosis of staphylococcal food poisonings. Zhur.mikrobiol., epid.i immun. 32 no.12:116 D '61. (MIRA 15:11)

1. Iz sanitarno-epidemiologicheskoy stantsii, Petropavlovsk-Kamchatskiy.

(FOOD POISONING) (STAPHYLOCOCCUS)

ACC. NR: AP6034117 SOURCE CODE: UR/0358/66/035/005/0612/0615

AUTHOR: Lebedev, G. I.; Provorov, I. A.; Zubkovich, B. A.

ORG: none

TITLE: Data from a study of rodents and their ectoparasites in Kamchatka

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 35, no. 5, 1966, 612-615

TOPIC TAGS: epidemiology, epizootic, rodent, disease vector, parasitology, parasite, ectoparasite

ABSTRACT: Parasites found on rodents in Kamchatka were studied to determine their relative species composition and prevalence. They are most common in the summer months. Table 1 shows the species and their hosts. Orig. art. has: 2 figures and 2 tables. [W.A. 50]

Card 1/2 UDC: 599.32-167+576.89](571.66)

ACC NR: AP6034117

Table 1. Percentage composition of various gamasoid tick species on various hosts

Host	Total number of ticks caught	Tick species																					
		Laelaps sp.	*Hypoaspis aculeifer*	*Hypoaspis sp.*	*Androlaelaps pavlovskii*	*Haemolaelaps glasgowi*	*Eulaelaps stabularis*	*Haemogamasus pontiger*	*Hormogamasus nidi*	*Haemogamasus ambulans*	*Ornithonyssus bacoti*	*Hirstionyssus isabellinus*	*Hirstionyssus ascoricis*	*Hirstionyssus sp.*	*Parasitidae gen. sp.*	*Pachylaelaps neotropheri*	*Macrocheles matrius*	*Pachylaelapidae*	*Phytoseiidae*	*Eviparaeilus emarginatus*	*Proctolaelaps*	*Acarida*
Norway rat	458	—	0.43	—	2.17	80.3	0.43	0.63	—	0.43	1.53	—	—	0.43	8.7	0.43	4.35	—	0.21	0.43	0.67	3.07
Black rat	130	—	—	—	—	23.0	—	—	—	—	69.2	—	—	—	—	—	—	—	—	—	8.8	—
Red vole	186	4.3	—	3.2	—	16.0	6.4	—	6.4	9.6	—	27.7	—	3.2	3.2	—	3.2	3.2	1.1	9.6	—	3.2
Shrew	44	4.5	—	—	—	—	22.7	—	—	—	—	45.6	27.2	—	—	—	—	—	—	—	—	—

SUB CODE: 06/ SUBM DATE: 11Mar65

Card 2/2

POLINKEVICH, V.V.; LEBEDEV, G.N.

New shuttle box swell. Tekst.prom. 20 no.8:33-34 Ag '60.
(MIRA 13:9)
(Looms)

ACC NR: AP6017957 SOURCE CODE: UR/0413/66/000/010/0025/0025

INVENTOR: Lebedev, G. N.; Serebryakova, A. V.; Starshenko, V. I.; Rogatkin, A. A.; Pundrovskiy, V. P.; Khlopkov, L. P.

ORG: None

TITLE: A method for removing phosgene from gases. Class 12, No. 181621

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 10, 1966, 25

TOPIC TAGS: phosgene, gas, filtration

ABSTRACT: This Author's Certificate introduces a method for removing phosgene from gases, particularly from waste gases in the production of titanium tetrachloride. The degree of purification is increased by adding hydrogen to the vapor-gas phase at a temperature below 500°C.

SUB CODE: 07/ SUBM DATE: 19Mar64

Card 1/1

UDC; 66.074.66

SMIRNOV, V.I., kand. tekhn. nauk; LEBEDEV, G.P., inzh.

Methods of coordinating hull fitting and allowances for its assembly. Sudostroenie 22 [i.e.23] no.10:32-37 O '57. (MIRA 11:2)
(Hulls (Naval architecture)) (Shipfitting)

SOV/110-58-7-12/21

AUTHOR: Lebedev, G.P., Engineer, and Loshchinina, N.I., Engineer.

TITLE: Frame-type elements for oscillograph MPO2. (Ramochnyye vibratory k ostsillografu tipa MPO2.)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Nr 7 pp 41-42 (USSR)

ABSTRACT: The frequency characteristics of the usual oscillograph elements type MOV2 are given. Even the most sensitive of these requires a current of 1 mA to deflect the light spot across half the film width, so that amplifiers are sometimes required. New elements types MOV2-9 and -10 have the following characteristics:

	MOV2-9	MOV2-10
Sensitivity mm/mA.metre	250	1000
Natural frequency in air, c/s	400	200
Internal resistance, ohms	55	55
Permissible current amplitude, mA	1.0	0.25

The construction of the elements is illustrated in Fig. 1 and briefly described. The resistance of these elements

Card 1/2

to vibration is not very good, moreover they have somewhat anomolous frequency characteristics with marked variations in sensitivity in particular ranges of frequency. The frequency characteristics of elements with a natural frequency in air of 200 c/s short-circuited on a low external resistance are given in Fig. 3. Curves 1 & 3 relate to elements that are badly balanced and Curve 2 to an element with a carefully balanced frame. Vibrations of the frame caused by internal vibrations in the oscillograph can be damped by immersing the elements in liquid, which also damps forced oscillations. Changes in frequency characteristics as functions of external impedance are shown in Fig. 3. Amplitude/frequency characteristics of a frame-type element taken at various temperatures are given in Fig. 4. If the temperature is raised by 10°C the frequency characteristics rises by 4 - 18%. There are 4 figures.

Card 2/2

SUBMITTED: November 1, 1957.

1. Oscillographs--Design 2. Oscillographs--Performance

SOV/119-59-7-7/18

8 (2)

AUTHOR: Lebedev, G. P., Engineer

TITLE: On the Problem of Damping in Self-recorders With Recording by Means of a Jet of Ink

PERIODICAL: Priborostroyeniye, 1959, Nr 7, pp 19-20 (USSR)

ABSTRACT: In the introduction to the present paper it is said that in technical publications nothing has hitherto been said about investigations of the manner of damping and its calculation in self-recorders, and it is assumed to be known that the motion of a loop-oscilloscope, into which no damping has been built, cannot describe the amplitude-frequency characteristic. The loop-oscilloscope with jet-self-recorder shown by figure 1 is discussed, and the differential equation (1) is given for the deflection of the jet. Furthermore, damping is calculated, and damping-moment and the degree of damping are given by equations (6) and (7) respectively. This degree of damping is a function of the dimension of the capillaries of the ink pressure, and of the loop parameter of the oscilloscope. As, normally, ink pressure can be regulated only in stages, recording is thereby hampered; furthermore, the recording error is estimated.

Card 1/2

On the Problem of Damping in Self-recorders With Recording by Means of a Jet of Ink

SOV/119-59-7-7/18

From the amplitude characteristic shown in figure 3 it may be seen that, in the case of a deflection of the jet in 20° the error does not exceed 2 %. There are 3 figures.

Card 2/2

LEBEDEV, G.P.; PAROLLA, D.I.

Registration of slowly changing indices of physiological functions on the oscillograph. Fiziol.zhur. 48 no.5:616-619 My '62. (MIRA 15:8)

1. From the Research Department No.3, "Vibrator" Works and the Laboratory for Circulatory and Respiratory Physiology, I.P.Pavlov Institute of Physiology, Leningrad.
(OSCILLOGRAPHY)

MIKHAYLOV, Pavel Aleksandrovich; LEBEDEV, G.P., red.; SOBOLEVA, Ye.M., tekhn. red.

[Repair of electrical measuring devices] Remont elektroizmeritel'nykh priborov. Moskva, Izd-vo "Energiia," 1964. 413 p. (MIRA 17:2)

ACC NR: AP6032538 SOURCE CODE: UR/0413/66/000/017/0149/0149

INVENTOR: Brant, A. A. Kostyuchenko, K. A.; Lebedev, G. P.; Zharov, V. M.

ORG: none

TITLE: A method of fastening fillers to plastic paneling of two- and three-layered marine gear and equipment structures. Class 65, No. 185716

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 149

TOPIC TAGS: mechanical fastener, ~~structure panel, machine~~ shipbuilding engineering, filler, plastic product

ABSTRACT: This Author Certificate introduces a method of fastening fillers to plastic paneling of two- and three-layered marine gear and equipment structures by means of plastic plugs inserted between the panels. For greater holding power and more esthetic appearance of the assembly, the seats for the fasteners are formed by making cylindrical channels between the panel layers with diameters larger than the opening in the panel. An adjuster crew is inserted into the channel and the space around it is filled with a solidifier which forms a threaded sleeve for the fastener when the adjuster screw is screwed out. Orig. art. has: 1 figure.

SUB CODE: 13/11/ SUBM DATE: 21Jun65/

Card 1/1 UDC: 629.12.011.28.002.29:629.12.01

LEBEDEV, G. V.

2

537.311.31 : 537.533 2

3311. REPLY TO THE CRITICAL REMARKS OF L.E.KVARTSKHAVA CONCERNING OUR PAPERS. G.V.Lebedev. Zh. éksper. teor. Fiz., Vol. 32, No 1, 144-6 (1957), in Russian.

Reply to Kvartskhava's criticism (Abstr 558/1957) of the work of Lebedev et al.(Abstr 960, 1918, 4765, 6123, 6257/1955).

LEBEDEV, G.V.

The MTMS-10 35 and MTMS-18 75 machines for welding reinforcing fabrics. Biul. tekh.-ekon. inform. no. 2:24-25 '61.
(MIRA 14:2)
(Electric welding--Equipment and supplies)

S/193/62/000/004/004/
A004/A101

AUTHOR: Lebedev, G. V.

TITLE: MTB-2 x 150/1600 (MTV-2 x 150/1600) welding machine for spot-welding large-size components

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, no. 4, 1962, 21-23

TEXT: The "Elektrik" Plant has designed and manufactured the MTV-2 x 150/1600 welding machine for electric resistance spot-welding of railroad car front and end wall sections from low-carbon steel of an aggregate thickness of 3 + 4 mm. The components are welded simultaneously in two spots with a distance of 80 mm between the spots, while the welding current is supplied from two sides by two welding transformers of 150 kV-amp each. Welding can be effected in two reciprocally perpendicular directions without the component being turned, which is realized with the aid of three pairs of automatic welding guns located at right angles. The author gives a brief description of the operation of the welding guns. The component welding cycle is automated and takes place in the following order: clamping the component between the electrodes of the hydraulic guns, welding, peening (holding the component under pressure with the welding

Card 1/2

MTB-2 x 150/1600 (MTV-2 x 150/1600) ...

current being switched off) and relieving the pressure (the electrodes are lifted and the component freed). Apart from a stepped regulation of the welding current power, the welder possesses a phase-regulating unit which makes it possible to change the current magnitude smoothly. The pressure between the gun electrodes is generated by a pneumatic-hydraulic assembly mounted on the welding machine. The maximum pressure between the gun electrodes amounts to 1,100 kg. The following technical specifications are given: Primary voltage - 380 v, secondary voltage - from 4.74 to 5.62 v; rated power - 2 x 150 = 300 kV-amp; switch-on duration (duty cycle) 3% (which can be increased to 5%); number of secondary voltage regulation stages - 3; maximum electrode working gravel - 30 mm; clearance between the upper and lower beams - 375 mm; useful overhang - 1,600 mm; rated compressed-air pressure - 4.5 kg/cm^2; free air consumption - 5 m3/hour; cooling water consumption - 800 l/h; overall dimensions (height x width x depth) - 1,950 x 800 x 3,350 mm; machine weight - 1,700 kg. The MTV-2 x 150/1600 welding machine has been installed and operates at the Leningradskiy vagonostroitel'nyy zavod im. Yegorova (Leningrad Railroad Car Plant im. Yegorov). There is 1 figure.

Card 2/2

LEBEDEV, G.V. (Kemerovo).

Morbidity analysis and epidemiological and preventive problems in epidermophytosis at the Kemerovo Coke Plant. Sov. med. 23 no.3:113-114 Mr '59 (MIRA 12:4)

(RINGWORM, epidemiology,
in coke workers (Rus))

LEBEDEV, G.V.

Incidence of epidermophytosis from data of the dermatology room of the Kemerovo Coke Chemical Plant. Vest.derm. i ven. 33 no.3:44-46 My-Je '59. (MIRA 12:9)
(RINGWORM, epidemiol.
in Russia (Rus))

LEBEDEV, G.V.

Role of epidermophytosis in the etiology and pathogenesis of eczema. Vest.derm.i ven. [35] no.2:46-50 F '61. (MIRA 14:3)

1. Iz Kemerovskogo oblastnogo venerologicheskogo dispansera (glavnyy vrach A.V. Kuchinskaya).
(ECZEMA) (RINGWORM)

LEBEDEV, G. V.

USSR/Biology - Plant Physiology

Card : 1/1

Authors : Lebedev, G. V.

Title : Effect of irrigation on the tannin composition of Azerbaidzhan tea

Periodical : Dokl. AN SSSR, 96, Ed. 6, 1257 - 1259, June 1954

Abstract : The basic component of a tea leaf, which determines the quality of the raw material and the ready product as well, is tannin (tannic acid). This component participates in the formation of the herb infusion, aroma and taste properties of the beverage (tea). The effect of irrigation on the tannin composition of tea is explained. Nine references. Graphs, illustrations.

Institute : Acad. of Sc. USSR, The K. A. Timiryazev Institute of Plant Physiology

Presented by : Academician A. L. Kursanov, April 20, 1954

LEBEDEV G.V.

PETINOV,N.S.; LEBEDEV,G.V.

Tea plantation irrigation in the Lenkoran area of the Azerbaijan S.S.R. Fiziol.rast. 2 no.3:228-234 My-Je '55. (MLRA 8:11)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk SSSR, Moscow
(Azerbaijan--Tea)

LEBEDEV, G. V. Cand Biol Sci -- (diss) " Physiological characteristics of the tea plant during irrigation ~~in the~~ conditions of the Lenkoran' zone of the AzSSR." Mos, (~~Publishing house Acad Sci~~ USSR ~~XXXXXX~~, 1957. 15 pp with ~~diagrams~~ graphs 22 cm. (Acad Sci USSR. Inst of Physiology of Plants im K.A. Timiryazev). 120 Copies. (KL, 23-57, 110).

COUNTRY : USSR
CATEGORY : Plant Physiology. Water Conditions. I

ABS. JOUR. : RZhBiol., No. 3 1959, No. 10614

AUTHOR : Petinov, N. S. , Lebedev, G. V.
INST. : Academy of Sciences USSR
TITLE : The Water Content in Tea Plants Cultivated under Irrigation.

ORIG. PUB. : Vsb.: Pamyati akad. N. A. Maksimova. M., AN SSSR, 1957, 87-97

ABSTRACT : The index of refraction, concentration of cell sap, water holding and water absorbing capacity of adult tea leaves were being determined in the presence of different amounts of soil moisture for the purpose of ascertaining the water application dates for the tea plantations in Lankoranskiy rayon of Azerbaydzhan SSR. In the period of rainfall on the unirrigated plot and the sprinkled plot, the difference in the indices of refraction is not great. In the period of high temperatures and relatively low

CARD: 1/2

KRYLOV, A.V.; MOLOTKOVSKIY, Yu.G.; LEBEDEV, G.V.; TARAKANOVA, G.A.

Earth's force of atttaction as a factor of organ formation in plants. Fiziol. rast. 5 no.4:368-371 Jl-Ag '58. (MIRA 11:8)

1. Institut fiziologii rasteniy im. K.S. Timiryazeva AN SSSR, Moskva.
(Plants, Effect of gravity on) (Polarity (Biology))

17(4),30(1)

AUTHOR: Lebedev, G. V.

SOV/20-128-3-55/58

TITLE: The Rate of Water Exchange in Swollen Plant Seeds

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 3, pp 632-634 (USSR)

ABSTRACT: As is known, the seeds swell due to hydration of their colloids. The hydrating water is regarded to be bound. The level of the forces binding the water determines the hydration degree of these biocolloids. This, however, does not explain the dynamic part of the process, or - in other words - the rate mentioned in the title is not determined if a fully swollen colloid is present. In the present paper, the author used the interferometric method of determining heavy water. Some of the problems solved at the same time with respect to this method are published. At first, the applicability of D_2O-solutions for plant experiments was tested. Table 1 shows that a certain dilution of D_2O takes place in the seeds after steeping. Table 2 shows that the D_2O - H_2O-mixture moves within the entire mass of seed without causing a separation of these components. Further, gourd- (sort Volzhskaya seraya) and horse-bean seeds

Card 1/3

(sort Russkiye chernyye), which had been steeped in a 4.9% D_2O-solution, were put into current water. Table 3 shows that the weight of these seeds remained unchanged for 24 h, i.e. no water was absorbed by colloidal and osmotic forces. Thus, all changes in the isotopic composition of the water were connected with its mobility due to diffusion. Table 4 shows that after the above-mentioned rinsing the entire water (marked with deuterium) was washed out of the seeds, and was replaced by the protium water. This applied to both living and killed seeds. To clarify accurately the dynamics of this process, samples for the isotopic composition of the water were taken in various short intervals during rinsing. Figure 1 shows that the rate mentioned in the title is rather high, particularly in the external layers of the seed (50% of the water was renewed within the 1st hour). In deeper layers, this value amounted to 20%. In beans, the rinsing proceeded more slowly than in gourd which is due to the size

of seed. In seed killed by heat, the said rate was higher than in living seed (probably due to the disturbance of certain cellular structures). Thus, the water retained by colloids is very movable and easily exchangeable. There are 1 figure, 3 tables, and 8 Soviet references.

ASSOCIATION: Institut fiziologii rasteniy im. K. A. Timiryazeva Akademii nauk SSSR (Institute of Plant Physiology imeni K. A. Timiryazev of the Academy of Sciences, USSR)

PRESENTED: June 5, 1959, by A. L. Kursanov, Academician

SUBMITTED: June 4, 1959

LEBEDEV, G.V.

An economical fine sprayer for liquids at low pressure. Fiziol. rast. 7 no.1:127-128 '60. (MIRA 13:5)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Spraying and dusting equipment)

LEBEDEV, G.V.

State of water in plant cells. Fiziol. rast 7 no.4:398-400 '60.
(MIRA 13:9)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Plants—Absorption of water) (Deuterium oxide)

PETINOV, N.S.; LEBEDEV, G.V.

Activity of oxidizing enzymes and respiration of leaves in tea plants grown under irrigation. Biokhim. chain. proizv. no.8: 21-25 '60. (MIRA 14:1)

1. Institut fiziologii rasteniy imeni K.A. Timiryazeva AN SSSR, Moskva.
(Tea--Irrigation) (Catalase)
(Plants--Respiration)

PETINOV, N.S.; LEBEDEV, G.V.; BAGIROV, A.Yu.; YEGOROV, V.G.

Quality of tea grown under new irrigation conditions. Biokhim. chain. proizv. no.8:26-28 '60. (MIRA 14:1)

1. Institut fiziologii rasteniy imeni K.A. Timiryazeva AN SSSR, Moskva i Avrorskaya chaynaya fabrika Sovnarkhoza AzerbSSR.
(Lenkoran Lowland--Tea--Irrigation)

LEBEDEV, G.V.

Carbohydrate and tannin content of ripe tea leaves in connection with the irrigation of tea plantations. Biokhim. chain. proizv. no.8:57-62 '60. (MIRA 14:1)

1. Institut fiziologii rasteniy imeni K.A. Timiryazeva AN SSSR, Moskva.
(Tea--Irrigation) (Sugars) (Tannins)

LEBEDEV, Gennadiy Vasil'yevich; PETINOV, N.S., otv. red.; POVOLOTSKAYA, K.L., red. izd-va; POLENOVA, T.P., tekhn. red.

[Tea cultivation under irrigation] Chainyi kust v usloviiakh oroshe-niia. Moskva, Izd-vo Akad. nauk SSSR, 1961. 103 p. (MIRA 14:6)
(Tea--Irrigation)

LEBEDEV, G.V.

New irrigation conditions of farm crops. Fiziol.rast. 9 no.4: 502-510 '62. (MIRA 15:9)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(LENKORAN' PROVINCE--TEA--IRRIGATION)

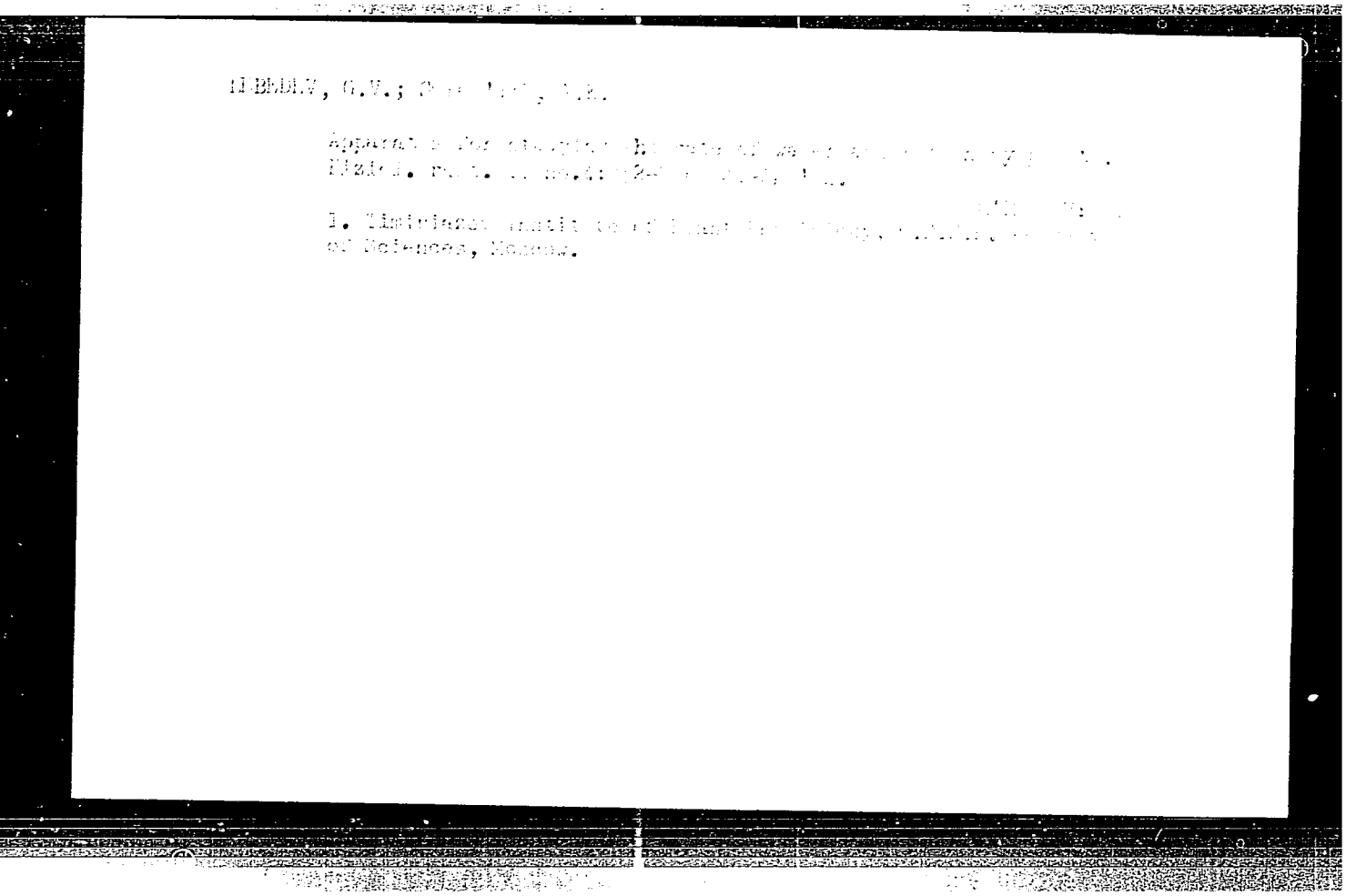
VARTAPETYAN, B.B.; LEBEDEV, G.V.

Biological work of the Institute of the Physical Methods of the Separation of Substances of the German Academy of Sciences in Berlin. Fiziol. rast. 9 no.6:747-748 '62. (MIRA 15:12)
(Germany, East--Isotopes--Research)

LEBEDEV, G.V.; SABININA, Ye.D.; CHUCHKIN, V.G.

State of water in the plant cell. Mobility of colloidal and crystal water. Fiziol. rast. 10 no.1:108-110 Ja-F '63. (MIRA 16:5)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Plant cells and tissues)
(Plants—Water requirements)



LEBEDEV, G.V.; CHUCHKIN, V.G.; SABININA, Ye.D.; BRYUKVIN, V.G.

Apparatus for continuous recording of water absorption by plants. Fiziol. rast. 11 no.6:1110-1114 N-D '64.

(MIRA 18:2)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

LEBEDEV, G.V.; ASKOCHENSKAYA, N.A.

State of water in plant cells and water exchange in plant seeds. Fiziol. rast. 12 no.3:394-397 My-Je '65.
(MIRA 18:10)

1. Institut fiziologii rasteniy imeni K.A. Timiryazeva AN SSSR, Moskva.

RAGOL'SKIY, Semen Zakharovich, kand. tekhn. nauk; LEBEDEV, Georgiy Yakovlevich, inzh.

[Mechanization of the transportation of power transmission line supports] Mekhanizirovannye sredstva transportirovaniia opor linii elektroperedachi. Moskva, Gosstroiizdat, 1962. 41 p. (MIR 17:2)

LEBEDEV, G.Ye.

Effective kier coating. Tekst.prom. 16 no.1:53 Ja '56.
(MIRA 9:4)

1.Starshiy master rizhskogo kombinata "Bol'shevichka".
(Bleaching)

LEBEDEV, G. Ye.

IOFFE, Iosif Grigor'yevich; MOLCHANOV, M.S., retsenzent; LEBEDEV, G.Ye., redaktor; DMITRIYEVA, N.I., tekhnicheskiy redaktor

[Capital assets of the textile industry and their use] Osnovnye fondy tekstil'noi promyshlennosti i ikh ispol'zovanie. Moskva, Gos. nauchno-tekhn. izd-vo M-va legkoi promysbl. SSSR, 1957. 138 p. (MLRA 10:8)

(Textile industry)

ZUBCHANINOV, Vladimir Vasil'yevich; POLYAK, T.B., kandidat tekhnicheskikh nauk, retsenzent; ZAMAKHOVSKIY, L.I., kandidat tekhnicheskikh nauk, retsenzent; GLAZOV, Ya.I., redaktor; LEBEDEV, G.Ye., redaktor; DMITRIYEVA, N.I., tekhnicheskiy redaktor.

[Technical and economic analysis of present-day trends in developing cotton spinning and cotton weaving equipment in capitalist countries] Tekhniko-ekonomicheskii analiz sovremennykh napravlenii v razvitii khlopkopriadil'nogo i khlopkotkatskogo oborudovaniia v kapitalisticheskikh stranakh. Pod red. IA.I.Glazova. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po legkoi promyshl., 1957. 142 p. (MIRA 10:11)
(Spinning machinery) (Looms)

DUBROVKIN, S., inzh.; LEBEDEV, I., inzh.

Fully precast sanitary-engineering blocks for thin-walled panel apartment houses. Na stroi. Mosk. 2 no.3:7-11 Mr '59. (MIRA 12:5)

(Moscow--Apartment houses) (Sanitary engineering) (Hot-water heating)

LEBEDEV, I.

Work of composite crews for the exchange of modern production experience in the tire industry. Plast.massy no.8:1-2 '61. (MIRA 14:7)

(Tires, Rubber)

LEBEDEV, I.

Answer to the editor's query. Gor. zhur. no.9:53 S '63.
(MIRA 16:10)

1. Nachal'nik otdela tekhnicheskogo obrazovaniya Ministerstva vysshego i srednego spetsial'nogo obrazovaniya SSSR.

LEBEDEV, I.A., kandidat meditsinskikh nauk; TRET'YAKOV, N.I.

Traumatic arteriovenous aneurysm of the internal carotid artery and cavernous sinus. Khirurgiia no.11:82-84 N '53. (MLRA 6:12)
(Aneurysms) (Carotid artery) (Cavernous sinus)

PERIKOV, V.M.; ROGOV, A.B.; LEBEDEV, I.A.

Preparing map originals by engraving in "vinylproz" on a layer of lacquer. Geod.i kart.no.2:52-61 Ap '56. (MLRA 9:10)
(Cartography)

LEBEDEV, I.A.

Manufacture of globoid gearing. Stan. i instr. 26 no.5:21-22 My '55. (MLRA 8:8)
(Gear cutting)

LEBEDEV, I.A., kandidat tekhnicheskikh nauk.

Manufacture of globoid gear-pairs. Vest. mash.35 no.9:34-37 S '55.
(Gearing, Worm) (MLRA 9:1)

LEBEDEV, Ivan Antonovich, kandidat tekhnicheskikh nauk; BORUZDIN, A.G., redaktor, inzhener; ANIKINA, M.S., izdatel'skiy redaktor; ROZHIN, V.P., tekhnicheskiy redaktor.

[Technology of globoid gears]. Tekhnologiia globoidnykh peredach. Moskva, Gos. izd-vo obor. promyshl., 1957. 107 p. (Moscow. Aviatsionnyi institut. Trudy, no.77).
(Gearing) (MLRA 10:6)

MUKHIN, Georgiy Ivanovich; POPOV, K.M., doktor ekon. nauk, prof., retsenzent; LEBEDEV, I.A., kand. ist. nauk, retsenzent; FISHCHEVA, T.V., red.

[Australia; physical geography and economic geography surveys. A textbook for the teacher] Avstraliia; fiziko-geograficheskii i ekonomiko-geograficheskii obzory. Posobie dlia uchitelia. Moskva, Izd-vo "Prosveshchenie," 1964. 291 p. (MIRA 17:7)

LEHEDEV, I.A.

Protective shield. Mashinostroitel' no.5:39 My '62. (MIRA 15:5)
(Milling machines--Safety measures)

ZAYTSEV, A.A.; LEBEDEV, I.A.; PIROZHKOV, S.V.; YAKOVLEV, G.N.

Extraction of rhenium by pyridine bases. Zhur. neorg. khim. 8 no.10:2407-2411 O '63. (MIRA 16:10)

1. Institut atomnoy energii im I.V. Kurchatova.
(Rhenium) (Pyridine bases)

LEBEDEV, I. A. Cand. Agric. Sci.

"Basic Metabolism of Rapidly Growing Calves," Dok. v-s Selkhpz nauk, No.3, 1948

All-Union Sci. Res, Inst. Animal Husbandry

1. LE[illegible]DEV, I. A.

2. USSR (600)

4. Feeding and Feeding Stuffs

7. Raising calves on low-concentrate rations, Sov. zootekh., 7 No. 5, 1952
Kandidat Sel'skokhozyaystvennykh Nauk

9.. Monthly List of Russian Accessions, Library of Congress, July 19 2. UNCLASSIFIED.

1. LEBEDEV, I. A.

2. USSR (600)

4. Calves

7. Study and scientific dessemination of progressive practice in raising the young of cattle. Sov. ~~zooth.~~ ZooTekh. 7 no. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

[redacted], I

Calves

Feeding calves with high-grade silage. Kolkh. proizv., 12, no. 7, 1952

Monthly List of Russian Accessions, Library of Congress October 1952 UNCLASSIFIED.

LEBEDEV, I.A. (Moscow)

Biological principles applied to the most significant stages in cattle breedin g. Usp. sovr. biol. 38 no.1:1-17 Jl-Ag '54.
(CATTLE BREEDING) (MLRA 7:10)

LEBEDEV, I. A.

"Influence of Level and Type of Feeding on Growth and Development of Kholmogory Heifers and on Their Subsequent Milk Yield." Acad Sci USSR, Inst of Morphology of Animals imeni A. N. Severtsov, Moscow, 1955. (Dissertation for the Degree of Doctor of Biological Sciences)

SO: M-972, 20 Feb 56

LEBEDEV, I. A.

LEBEDEV, I.A., red.; AZAROVA, O.A., red.; ZUBRILINA, Z.P., tekhn.red.

[Advanced practice in raising calves] Peredovoi opyt po vyrashchivaniiu teliat. Izd. 3-e. Moskva, Gos.izd-vo sel'khoz. lit-ry, 1957. 116 p. (Bibliotechka zhivotnovoda po krupnomu rogatomu skotu, no.14) (MIRA 11:2)
(Calves)

SHAPAYEVA, Ye.S., otv.red.; LEBEDEV, I.A., otv.red.; ROGOVSKAYA, Ye.G., red.; VOLKOV, N.V., tekhn.red.

[Agroclimatic handbook for the Karelian A.S.S.R.] Agroklimaticheskii spravochnik po Karel'skoi ASSR. Leningrad, Gidrometeor.izd-vo, 1959. 183 p. (MIRA 13:11)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. Severo-Zapadnoye upravleniye.
(Karelia--Crops and climate)

LEBEDEV, I., kand. sel'skokhozyaystvennykh nauk

Achievements of Chinese stock raisers. Nauka i pered. op v sel'khoz. 9 no.6:74-77 Je '59. (MIRA 12:9)
(China---Stock and stockbreeding)

LEBEDEV, I.A.

Great progress in the development of swine farming in China.
Svinovodstvo 13 no.11:45-47 N '59. (MIRA 13:2)
(China--Swine)

LEBEDEV, Ivan Aleksandrovich, kand. sel'khoz. nauk; BRUSANOV, N.A., red.; DEYEVA, V.M., tekhn. red.

[Soybean as a valuable forage crop] Soia - tsennaia kormovaia kul'tura. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1961. 118 p. (MIRA 14:10)

(Soybean) (Forage plants)

LEBEDEV, I.A., kand. sel'skokhoz. nauk

Plenum of the Coordination Council on problems in livestock feeding. Zhivotnovodstvo 24 no.6:86-87 Je '62.
(MIRA 17:3)

LABEDEV, I. A., SPITSYN, V.I., PIKAYEV, A. K., and SAVICH, I. A.

"Synthesis of a Number of Schiff Bases Derived From Aromatic o-Hydroxyaldehydes and Heterocyclic Amines," by I. A. Savich, A. K. Pikayev, I. A. Labedev, and V. I. Spitsyn, Chair of Inorganic Chemistry, Moscow State University, Vestnik Moskovskogo Universiteta, Vol 11, No 1, Jan/Feb 57, pp 225-231

According to the text of the paper, 13 hitherto unknown Schiff bases have been synthesized. Their properties are described. It has been established that these bases can be used for the precipitation of a number of cations. The precipitates formed by Cu^{++}, Ni^{++}, Ag^{+}, Fe^{++}, Fe^{+++}, Co^{++}, UO_2^{++}, Cr^{+++}, La^{+++}, and Zr^{++++} with 2-(2-hydroxy-1-naphthylamino) pyridine were found to have specific colors which vary from cation to cation. These colors are listed.

[Comment: Methods for the precipitation and analytical determination of uranium, zirconium, and lanthanum are of importance in connection with nuclear energy work.]

Sum 1258

LEBEDEV, I. A., SPITSYN, V.I., SAVICH, I. A., and PIKAYEV, A. K.

"Complex Compounds of Hexavalent Uranium With Some Organic Substances; Part 1 -- Inner Complex Compounds of Uranium With Some Schiff Bases," by I. A. Savich, A. K. Pikayev, I. A. Lebedev, and V. I. Spitsyn, Moscow State University, Zhurnal Neorganicheskoy Khimii, Vol 1, No 12, Dec 56, pp 2736-2741

The article describes the methods of preparation and properties of ten new inner-complex salts of hexavalent uranium with Schiff bases derived from aromatic hydroxy-aldehydes and heterocyclic amines.

Sum 1258

LEBEDEV I.A.

USSR

62

Some derivatives of thiodipropionic acid. A. N. Kost, I. A. Lebedev, and V. G. Yashunskiĭ. *Vestnik Moskov. Univ.* 8, No. 3, *Ser. Fiz.-Mat. i Estestven. Nauk* No. 2, 111–14(1953).—Treating $Na_2S.9H_2O$ (1 mole) with 2 moles CH_2:CHCH dropwise at 15–17°, stirring 4 hrs. at room temp., gave an oily layer which, when extd. with C_6H_6, washed, dried, and distd. yielded 83–6% β,β′-dicyanodiethyl sulfide (I), needles, m. 26°, b_{1-2} 163–4°, n^{20}_D 1.5047, d_4 1.1270. Considerably lower conversions were obtained at faster reaction rates or higher temps. Refluxing I (0.143 mole) 4 hrs. with 100 ml. concd. HCl yielded 90% β,β′-thiodipropionic acid (II), m. 133.5° (from H_2O). The following derivs. of II were obtained by conventional methods: di-Et ester, b_1 148°, n^{20}_D 1.4646, d_{20} 1.0951; di-Bu ester $b_{0.4}$ 194.6°, n^{20}_D 1.4647, d_{20} 1.0326; dianilide, m. 163.5° (from EtOH); di-*p*-toluidide, m. 193.5° (from EtOH).

Gerard Aufleger

(2)

Chem Org. Chem.

Lebedeo, T. A.

62

Mechanism of Diffusion in Substitutional Solid Solutions. T. A. Lebedev (Oaklady Akad. Nauk S.S.S.R., 1950, 65, (2), 163-165; C. Abs., 1950, 44, 9760).—[In Russian]. A mechanism wherein the displacement of an element in a substitutional alloy is brought about in the act of rotation of a complex of atoms is used to account for the diffusion, in particular in the difficult instance of alloys of stoichiometric compn., e.g. $CoAl_2$, FeSi, &c. Calculations on a model show that the perturbation of the lattice produced by such a rotation is one-tenth or one-twelfth that caused by simple displacement of single atoms. The activation energy of rotation is lowered considerably if the complex involved is not one atomic layer thin, but represents a "packet" of several layers. That rotational can give rise to a unidirectional flow of a given atomic species is determined by the fact that a concentration gradient favours preferential rotation in a given sense. Rotations also account for back diffusion, which is brought about in the same way as the direct diffusion.

LEBEDEV, I.A.; PIROZHKOV, S.V.; RAZBITNOY, V.M.; YAKOVLEV, G.N.

Complex formation between Am^{3+} and oxlate ions. Radiokhimiia 2 no.3:351-356 '60. (MIRA 13:10)
(Americium compounds) (Oxalates)

20651

S/186/60/002/005/006/017
A051/A130

21.3100

AUTHORS: Lebedev, I. A.; Pirozhkov, S. V.; Yakovlev, G. N;

TITLE: Determination of the composition and instability constants of oxalate, nitrate and sulfate Am(III) and Cm(III) complexes by the ion-exchange method.

PERIODICAL: Radiokhimiya, v.2, no. 5, 1960, 549 - 558

TEXT: The article deals with a study of complex-formation of $Am^{(III)}$ and $Cm^{(III)}$ with oxalate-, nitrate- and sulfate- ions, using the ion-exchange method on the cationite. The complex-formation of $Pu^{(III)}$ in oxalate solutions was investigated in particular (Ref. 5: A.D. Gel'man, N.N. Matorina, A.I. Moskvin, Atomnaya energiya, 4, 1, 52, 1958). It is pointed out that the method in question has received wide application in recent times for determining the composition and instability constants of the complex ions of radioactive elements. Mention is made of Ref. 6 (V. V. Fomin, Usp. Khim. 24,8, 1010, 1955) as outlining the calculation method for the various cases. The experiments were conducted on indicator quantities of Am^{241} and Cm^{242} isotopes, the concentration of which was about 10^5 decays/

Card 1/ 14

Determination of the composition and ....

min.ml in the initial solution. A KY-2 (KU-2) cationite was used as the sorbent (grain size 140 - 200 mesh). In order to determine the distribution coefficient of the metal, the weighed resin portion between the cationite and solution, was brought to equilibrium with a certain volume of the solution, containing known concentrations of Am and Cm and ammonium salt of the corresponding acid. Experiments were conducted at 20 - 25°C (room temperature). The effect was determined of the pH on φ (distribution coefficient) of Am^{3} in the absence of a complex-forming agent (φ_0), since the experiments were carried out at various pH of the solution. Table 1 gives the results of these determinations, indicating that with a change of the pH from 1.5 to 4.4, φ_0 does not actually change. Certain experiments showed that: 1) the change of the resin and solution ratio (b) does not affect φ, 2) the effect of the resin swelling on the solution volume does not exist, 3) an equilibrium in the system cationite-solution under the given conditions (ion strength μ = 0.2 - 1.5, ph 1.5 - 4.0) is reached in 3 - 4 hours. Tables 2 - 8 and graphs 1 - 3 give the experimental data on the relationship of φ of $Am^{(III)}$ and $Cm^{(III)}$ to the concentration of the nitrate-, sulfate- and oxalate ions. φ was calculated from results of the analysis according to

Card 2/14

Determination of the composition and ....

the following formula:

$$\varphi = \frac{c_0 - c_M}{bc_m} \qquad (1).$$

The activity of the oxalate ions was calculated from the formula:

$$a_{C_2O_4^{2-}} = \frac{B}{\frac{1}{\gamma^2} + \frac{a_{H^+}}{\gamma_1 K''} + \frac{a_{H^+}^2}{K'K''}} \qquad (2)$$

where B is the concentration of the ammonium oxalate, a_{H^+} activity of the hydrogen ions, K' and K" - I and II constants of dissociation of oxalic acid, equalling $5.36 \cdot 10^{-2}$ (Ref. 7: B.S. Darken, J. Am. Chem. Soc., 63, 1007, 1941) and $5.42 \cdot 10^{-5}$ (Ref. 8: G. D. Pinching, R. G. Bates. J. Reseach Nat. Bur. Stand. 40, 405, 1948), respectively. The values of the activity coefficients of the uni- and two-charge ions (γ_1 and γ_2) for the oxalate solutions were taken by the authors from Ref. 9 (C.E. Crouthamel, D. S. Martin,

Card 3/14

Determination of the composition and ...

J. Am. Chem. Soc., 73, 569, 1951). The functions Ψ_1, Ψ_2, Ψ_3 were calculated from experimental data according to formula (3), showing the relationship of the distribution coefficient of the metal during sorption on the cationite, to the concentration of the complex-forming agent, are connected with the stability constants of the complex ions:

$$\varphi = \varphi_0 \frac{1 + \sum_{j=1}^{p-r} l_j [A]^j}{1 + \sum_{i=1}^{n} \beta_i [A]^i} \qquad (3)$$

where β_i are the general stability constants of the complex ions, [A] - the concentration (activity) of the addend; n - maximum number of addends, bound to an ion of metal; l_j - the constants for the given systems (at constant ionic strength and constant concentration of the exchanging cation), connected with the sorption of the complex cations; p - metal charge; r - charge of the addend. By introducing the functions:

Card 4/14

Determination of the composition and ....

$\varphi = \frac{\rho_0}{\rho} - 1$ (4); $\Psi_1 = \frac{\Psi}{[A]}$ (5) and $\Psi_2 = \frac{\frac{\Psi_1}{\Psi_1^0} - 1}{[A]}$ (6)

the following expression is derived:

$$\Psi = \frac{(\beta_1 - l_1)[A] + (\beta_2 - l_2)[A]^2 + \beta_3[A]^3 + \dots}{1 + l_1[A] + l_2[A]^2} \quad (7)$$

since the complex formation of tri-valent cation is studied, $p - r \leqslant 2$, then no more than two l_j should be taken, thus:

$$\Psi_1 = \frac{\beta_1 - l_1 + (\beta_2 - l_2)[A] + \beta_3[A]^2 \dots}{1 + l_1[A] + l_2[A]^2} \quad (8)$$

Card 5/14

Determination of the composition and ....

$$\psi_1^0 = \beta_1 - l_1, \tag{9}$$

$$\psi_2 = \frac{\frac{\beta_2 - l_2}{\psi_1^0} - l_1 + \left(\frac{\beta_3}{\psi_1^0} - l_2\right)[A] + \dots}{1 + l_1[A] - l_2[A]^2} \tag{10}$$

$$\psi_2^0 = \frac{\beta_2 - l_2}{\psi_1^0} - l_1 \tag{11}$$

Taking into account the low values of l_1 and l_2 it is seen that in the case of complex-formation with one addend, the slope of the curve of this relationship is equal to 1, with two about 2, with three more than 2, etc. Further, the stability constants of these complex ions can be calculated

Card 6/14

Determination of the composition and ....

from the successive calculation of the values of ψ_i^0 (by extrapolating) $k[A] = 0$, the relationship of ψ_i to $[A]$. The authors state that if the sorption of the complex is disregarded as compared to the sorption of the free ion of metal, then in formulae (3) - (11), the values of l_j can be left out, and then

$$\psi_1^0 = \beta_1 \qquad (12), \qquad \psi_2^0 = \frac{\beta_2}{1} \qquad (13)$$

If the sorption of the complex cation is not disregarded, then the value of β, can be computed in the following manner: the function is calculated for several points:

$$\phi = \frac{\frac{\varphi_0}{\varphi}(\psi_1^0[A] - 1) + 1}{[A]^2} \qquad (14)$$

After having found the value of ϕ^0 by extrapolating the dependence ϕ from $[A]$ to $[A] = 0$ a graph indicating the dependence of

Card 7/14